

PATENT ABSTRACTS OF JAPAN

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(71)Applicant : TAIYO KAGAKU CO LTD

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(72)Inventor : TANAKA YUKIKO
KOBAYASHI KANARI
AOI NOBUYUKI

(54) ANXIETY INHIBITORY COMPOSITION

(57)Abstract:

PROBLEM TO BE SOLVED: To obtain an anxiety inhibitory composition comprising theanine as an active ingredient, effective for controlling anxiety caused by a methylxanthine derivative or caffeine.

SOLUTION: This anxiety inhibitory composition comprises theanine as the active ingredient. Theanine can be prepared by synthesis from glutamine and ethylamine or its derivative mixture with a glutaminase enzyme or from an extracted solution of tea leaves.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to food, a soft drink, a dryness article, luxury goods, and medical supplies about the uneasy inducement suppression constituent characterized by containing a theanine.

[0002]

[Description of the Prior Art] Modern society is society with much stress, as a result, becomes various body symptoms, and injures our health. Although physical, chemical, physiological, social, the mental target of the cause of stress, etc. are various, a body symptom is avoidable by removing these causes. However, the panic attack which a reason does not understand in recent years and which is depended uneasily poses a problem. Since he does not understand a reason for this misgiving, it is not understood by others but is large. [of pain] Moreover, since misgiving has been continued for a long time even if it will be in a temporary recovery state, misgiving cannot be removed, but new misgiving of a recurrence may be caused. As one of the causes of a panic attack, misgiving is caused by continuous or habitual ingestion of a methyl xanthin derivative, and resulting in a fit is known. It is uneasy, and the intense insecurity caused in 2nd order and misgiving without a reason which happens from a bodily bottom are the features, and the main symptom of a panic attack does not start not having [the abnormalities of the bodies, such as dyspnea and shaking, are sensed,] a cause suddenly, either, and cannot stand because of the intense fit (Hisanobu Kaitani : the uneasy matter within a brain, 1997). However, an effective means to suppress the uneasy inducement which will generate a panic attack by present is not known at all.

[0003] There are caffeine, a theophylline, a theobromine, etc. as a methyl xanthin derivative contained in food. Caffeine is contained in coffee and many theophyllines in cocoa are contained in tea by the theobromine. These methyls xanthin derivative is the most popular medicine all over the world, it is taken in from coffee, green tea, tea, cocoa, a cola drink, chocolate, over-the-counter medicine, etc., and the average intake in the world is presumed to be 70mg of one day persons. The panic attack which intense misgiving attacks suddenly may occur with the shape of the body of an uneasy symptom being promoted, and it coming how and not stopping by continuous or habitual methyl xanthin derivative ingestion, (Boulenger et al: Archives of General Psychiatry 41, 1067-1071, 1984; Clementz, G.L. and J.W. Dailey: American Family Physician 37 (5)). It is called 167-172 and 1988 and it is said that it is one cause of a panic attack.

[0004] About the influence on the body by ingestion of caffeine, technology, such as an anti-stress agent (JP,6-100442,A), a stimulant action inhibitor (JP,63-88126,A) by the Ganoderma extract, a theanine or an excitement inhibitor (JP,4-253916,A) by the theanine inclusion, and a caffeine stimulant action inhibitor (JP,9-40568,A), is indicated. however, such well-known technology is technology to ease the influence of the body on a short period or temporary caffeine, and differs as the uneasy inducement by the continuous or habitual methyl xanthin derivative of the invention in this application. In order to injure the stomach and intestines of coffee and tea or to solve troubles, like falling asleep is barred, the health drink material and health drink (JP,5-192116,A) which mix medicines, such as Houttuynia herb, a coix seed, and a cassia seed, are indicated. However, the invention in this application is the technology in which such technology also differs. Moreover, well-known technology is not indicated about the panic attack whose symptoms are shown by causes other than continuous or habitual ingestion of a methyl xanthin derivative.

[0005]

[Problem(s) to be Solved by the Invention] this invention aims at offering the constituent which suppresses uneasy inducement by easy ingestion.

[0006]

[Means for Solving the Problem] when this invention persons examined the matter which has an effect in such uneasy inducement suppression, they found out that a kind which is the amino acid that in green tea contained, and a theanine had such an effect, and completed this invention [many] It is the new effect which it was not known about the uneasy inducement depressor effect of a theanine until now, but this invention persons found out for the first time. Hereafter, this invention is explained in full detail.

[0007]

[Embodiments of the Invention] With the uneasy inducement in this invention, the thing to depend on continuous or habitual ingestion of a methyl xanthin derivative or its cause cannot be specified. Caffeine, a theophylline, and a theobromine are mentioned as a methyl xanthin derivative here. Although especially limitation does not have a methyl xanthin derivative's existence form, they are half-fermentation tea, such as fermentation tea, oolong tea, etc., such as food which added nature, or a

composite refined material and these, and medical supplies, coffee cocoa, green tea, tea, or a workpiece using these. Although the uneasy inducement suppression constituent of this invention may use the theanine of a high grade as it is Protein processed foods, such as starch processed foods, such as a pancake, rice, Cookie, a rice cracker, and hail, and a hum sausage hamburger, tofu, AGE cheese-head yogurt, Confectionary, such as jelly ice cream, frozen desert, and a gum candy caramel chocolate pudding, The food constituent which comes to add a theanine in seasonings, such as jam marmalade peanut-butter butter margarine, sugar, a sweetener, a nucleic-acid seasoning, an amino acid seasoning, an extract seasoning, bean paste, soy sauce, and mirin, etc., The tablet which it comes to mix with other food constituents for the drink constituent which comes to add a theanine to a soft drink, mineral water and a taste drink, an alcoholic beverage, a health drink, etc., or the purpose added to these food and a drink may be used. Moreover, constituents, such as a capsule, a tablet, powdered material, a granule, a health drink, an injection agent, and an intravenous drip agent, are sufficient also as medical supplies.

[0008] The theanine used for the uneasy inducement suppression constituent of this invention Although it does not limit especially, the theanine contained in the leaf of the tea which is the principal component of a brown taste is known. the content Are higher than other amino acid. with highest-quality green tea (above), in 100g of dryness tea leaves 2466.1 mg, With highest-quality green tea (average), it is at 2007.7 mg and green tea (above). With 652.5 mg and coarse tea, 21.7 mg is reported by 1496.6 mg and green tea (average) in 416.7 mg and roasted tea (***** No.40, 65, 1973). Moreover, it is used as a food additive which makes taste a use, there is no limit in the addition, and it is the high matter of safety. As a manufacturing method of the theanine used for this invention Although it does not limit especially, an organic synthesis method (Chem.Pharm.Bull. and 19 (7) 1301-1307 (1971)), Bacterial coupling (JP,5-68578,A, JP,5-328986,A) or the strange method [ethylamine / in these methods] using ethylamine derivatives, such as an ethylamine hydrochloride The bacterial coupling which plant cell cultivation (JP,5-123166,A), the method of extracting from tea leaves, etc. are mentioned, and can obtain a theanine cheaply in large quantities is desirable.

[0009] moreover, the theanine obtained by such method -- L-theanine, D-theanine, and DL-theanine -- although all are usable, since the impurity contained can also be taken in as food and does not have the need for advanced refining, L-object of the natural-product origin especially has desirable L-object of the natural-product origin in this invention Or L-theanine compounded in enzyme is sufficient. Although sufficient effect can be acquired if more than 0.3mg per weight of 1kg (it displays like 0.3mg/kg and a day below) is prescribed for the patient as a theanine on the 1st in order to use as an uneasy inducement suppression constituent in this invention, if the amount of medication is made to increase, an effect will be reinforced further. Although especially an upper limit does not exist in the amount of medication of a theanine, when the characteristic taste and characteristic economical efficiency of a theanine are taken into consideration, it is desirable not to exceed 300mg/kg and the degree of schedule generally. Therefore, although the configuration, the physical properties, etc. of the uneasy inducement suppression constituent of this invention must adjust suitably the content of the theanine which is an active principle in order for the uneasy inducement suppression constituent of this invention to fully demonstrate the effect, it is desirable to consider as the content which can carry out /kg, and day -300mg/kg, and day ingestion 0.3mg as a theanine. 0.3mg is /kg and a day - 30mg/kg, and a day still more desirably. Moreover, it is most desirable to consider as 0.3mg/kg and day -3mg/kg and a day.

[0010] Although especially the method of detection of a theanine is not limited, after derivatizing by the precolumn by the ortho phthalaldehyde (OPA), its method of carrying out a detection fixed quantity with a fluorescence detector by the high speed chromatography using an ODS column is desirable. As a form of the constituent of this invention, it is a solution, a suspended solid, powder, a solid-state moldings, etc., mousse jelly, frozen desert, candy, and chocolate cracker cake pan soup coffee cocoa juice, tea, alcohol, medical supplies, etc. are various, and this invention is not limited by this. Next, although an example explains this invention further, the ranges of this invention are not these things limited to seeing.

[0011]

[Example] Example 10.3M glutamine and 30 degrees C of 1.5M ethylamines were made to react in a 0.3U/ml glutaminase for 22 hours among the way acid buffer solution (a way acid disodium-sodium hydroxide, pH 11). The theanine of 225mmol(s) was isolated from reaction mixture 1L. In addition, the glutamic acid of a by-product was 20mmol(s). In addition, isolation refining from reaction mixture applied reaction mixture to 1xDowex 50x8 and Dowex2 column chromatographies, and was performed by carrying out ethanol processing of this. This isolation matter was covered over the amino acid analyzer paper chromatography, and the theanine was checked by showing the same behavior as the standard substance. When hydrolysis processing was performed by the hydrochloric acid or the glutaminase, glutamic acid and the ethylamine were produced at a rate of 1:1. Thus, since the isolation matter was understood by the glutaminase an added water part, it is shown that the ethylamine had combined with gamma grade of glutamic acid. Moreover, it also checked that the glutamic acid produced in hydrolysis was an L type by the glutamate dehydrogenase (GLuDH), and it checked that the obtained compound was L-theanine.

[0012] The example 2 tea (*Camellia sinensis* L.) leaf was eluted by through and 1NNaOH after extraction in hot water in the cation exchange resin (Dowex HCR Wmade from Muromachi Chemical industry- 2). The elution fraction according an elution fraction to through and 15%EtOH was condensed using RO film (NTR by NITTO DENKO CORP. 729 HF) to activated carbon (regent activated carbon SG made from Nimura Chemical industry), the column chromatography refined, recrystallization was performed further, and L-theanine was manufactured.

[0013] The uneasy inducement depressor effect of this invention article to one example of an examination was examined. The examination was performed to six subjects selected by high uneasy **** by the MAS method (Taylor, Abe, and Takaishi; "actual nature uneasy inspection (MAS) use guidance, a 3 capital bookstore, and 1968) for drinking about six or more cups of coffee on the 1st, and evaluating the uneasy grade of actual nature. Present an examination with the uneasy inducement suppression constituent water (uneasy inducement suppression constituent water is called below) which dissolved 50mg of uneasy

inducement suppression constituents obtained in the example 1 in mineral water 100g (it is equivalent to about 0.8mg / kg), uneasy inducement suppression constituent water is made to **** 3 times per day, and it is MAS again after two weeks. The method estimated the uneasy grade. Among six persons, five persons became low uneasy ****, one person became inside uneasy ****, and the improvement of a symptom was accepted by **** of the uneasy inducement suppression constituent water for two weeks.

[0014] A total of seven man and woman is made to **** the drink (for it to be equivalent to about 1mg / kg, 5mg / kg, and 200mg / kg, respectively) which dissolved 0mg, 60mg, 300mg, and 1200mg for the uneasy inducement suppression constituent of this invention article obtained in example of examination 2 example 1, and the example 2 in coffee hot water extract 100 g for one month 10 times per day, respectively, and result be shown in Table 1.

[0015]

[Table 1]

テアニン含量	0 mg	60 mg	300 mg	1,200 mg
高不安域群	4	2	0	0
中不安域群	3	3	1	0
低不安域群	0	2	6	7

[0016] It will be as follows if the embodiment of this invention is raised.

- (1) The uneasy inducement suppression constituent characterized by containing a theanine.
- (2) The uneasy inducement suppression constituent whose theanine is an L-theanine.
- (3) The uneasy inducement suppression constituent whose theanine is a D-theanine.
- (4) The uneasy inducement suppression constituent whose theanine is a DL-theanine.
- (5) The uneasy inducement suppression constituent given [aforementioned] in (1) - (4) characterized by being manufactured when a theanine makes a glutaminase act on a glutamine and the mixture of an ethylamine.
- [0017] (6) The uneasy inducement suppression constituent given [aforementioned] in (1) - (4) characterized by being manufactured when a theanine makes a glutaminase act on the mixture of a glutamine and an ethylamine derivative.
- (7) The uneasy inducement suppression constituent given [aforementioned] in (1) - (2) characterized by a theanine being the tea origin.
- (8) The uneasy inducement suppression constituent which uneasy inducement twists to a methyl xanthin derivative and which is a thing.
- (9) The uneasy inducement suppression constituent which uneasy inducement twists for caffeine and which is a thing.
- (10) The uneasy inducement suppression constituent which uneasy inducement twists to a theophylline and which is a thing.
- [0018] (11) The uneasy inducement suppression constituent which uneasy inducement twists to a theobromine and which is a thing.
- (12) The uneasy inducement suppression constituent which uneasy inducement twists to coffee or a coffee workpiece and which is a thing.
- (13) The uneasy inducement suppression constituent which uneasy inducement twists to cocoa or a cocoa workpiece and which is a thing.
- (14) The uneasy inducement suppression constituent which uneasy inducement twists to green tea or a green tea workpiece and which is a thing.
- (15) The uneasy inducement suppression constituent which uneasy inducement twists to fermentation, half-fermentation tea, a fermentation tea workpiece, or a half-fermentation tea workpiece and which is a thing.

[0019]

[Effect of the Invention] The uneasy inducement suppression constituent which is this invention article as mentioned above can suppress uneasy inducement easily. In the taste, a scent, etc., using this invention article has a wide application range in food, medical supplies, etc., it also considers an effect and the point of safety in them, combines with them, and is very useful.

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CLAIMS

[Claim(s)]

[Claim 1] The uneasy inducement suppression constituent characterized by containing a theanine.

[Claim 2] The uneasy inducement suppression constituent according to claim 1 which is what uneasy inducement depends on a methyl xanthin derivative.

[Claim 3] The uneasy inducement suppression constituent according to claim 1 which is what uneasy inducement depends on caffeine.

[Translation done.]